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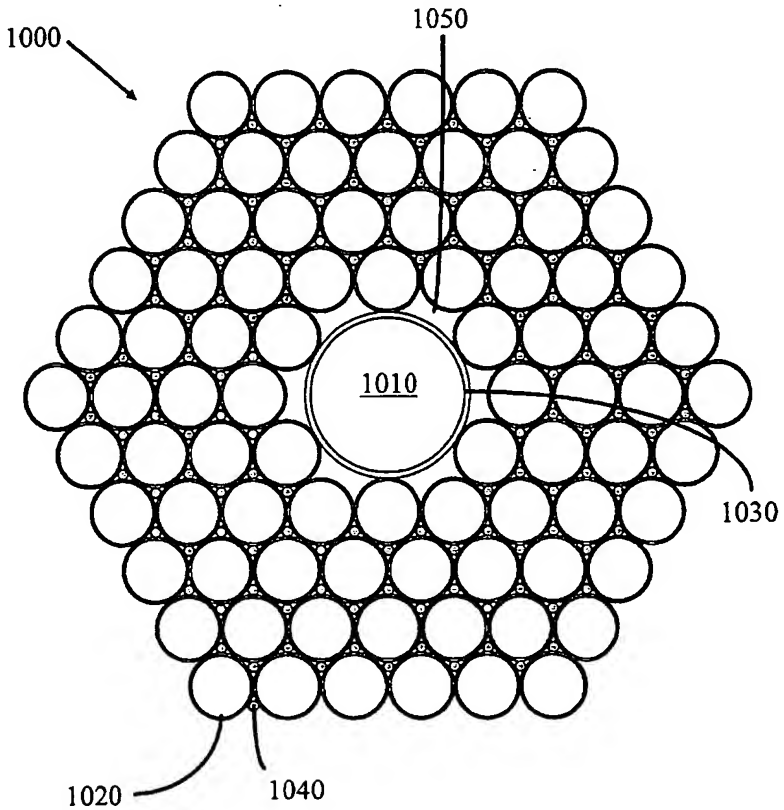
(54) Title: PHOTONIC BANDGAP OPTICAL WAVEGUIDE



(57) Abstract: Novel preforms and methods of making novel preforms are described. The preforms are suitable for being drawn into photonic bandgap optical fibres. In one form, the preform (1000) comprises a stack of elongate members comprising, in transverse cross section, a triangular close-packed arrangement of circular cross section capillaries (1020), which define interstitial regions containing solid rods (1040). The stack is supported around a relatively large capillary (1030), which defines an inner region of the stack. The stack may be adapted by varying the number of rods in any given interstitial region, in order to generate various different configurations of cladding structure, which can be made into optical fibres having surprising operational characteristics, such as a split bandgap.

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